

**WHAT IS CLAIMED IS:**

1. A method for negotiating an Internet Protocol (IP) address for an imaging apparatus connected to a network, comprising the steps of:

controlling network communication between said imaging apparatus and said network;

5 defining an imaging state when said imaging apparatus is available for imaging, wherein during said imaging state said imaging apparatus waits in an idle state during periods of non-imaging;

defining an automatic IP address negotiation state when said imaging apparatus is not available for imaging;

10 determining whether said imaging apparatus is in said idle state;

if said imaging apparatus is in said idle state, then determining whether said imaging apparatus should leave said imaging state and enter said automatic IP address negotiation state; and

15 when said imaging apparatus is in said automatic IP address negotiation state, then attempting to automatically assign a first IP address to said imaging apparatus.

2. The method of claim 1, further comprising the steps of determining whether the step of attempting to automatically assign said first IP address to said imaging apparatus is complete, and if so, then said imaging apparatus leaves said automatic IP address negotiation state and enters said imaging state.

3. The method of claim 1, wherein said imaging apparatus includes networking hardware having a data channel, wherein when said imaging apparatus is in said idle state, said data channel is not owned by a user.

4. The method of claim 1, wherein said automatic IP address negotiation state comprises the step of attempting to renew a lease of a current IP address.

5. The method of claim 4, further comprising the steps of determining whether the step of attempting to renew said lease of said current IP address is complete, and if

so, then said imaging apparatus leaves said automatic IP address negotiation state and enters said imaging state.

6. An imaging apparatus, comprising:

an imaging engine having firmware defining logic and processing functions; and  
networking hardware communicatively coupled to said firmware, said firmware  
and said networking hardware selectively providing an imaging state and an automatic  
5 Internet Protocol (IP) address negotiation state,

wherein when said imaging apparatus is in said imaging state then said imaging  
apparatus is available for imaging, and wherein during said imaging state said imaging  
apparatus waits in an idle state during periods of non-imaging, wherein when said  
imaging apparatus is in said automatic IP address negotiation state, said imaging  
10 apparatus is not available for imaging,

wherein if said imaging apparatus is in said idle state, then said firmware  
determines whether said imaging apparatus should leave said imaging state and enter  
said automatic IP address negotiation state; and

when said imaging apparatus is in said automatic IP address negotiation state,  
15 then said firmware being adapted to attempt automatic assignment of an IP address to  
said imaging apparatus.

7. The imaging apparatus of claim 6, wherein said networking hardware  
comprises:

a media access controller communicatively coupled to said firmware; and  
a hardware filter communicatively coupled to said media access controller and  
5 communicatively coupled to said firmware,

said media access controller being adapted for sending and receiving Dynamic  
Host Configuration Protocol (DHCP) packets over said network,  
wherein during said automatic IP address negotiation state, said media access  
controller forwards received first DHCP packets to said hardware filter, which in turn  
10 passes said received first DHCP packets to be processed by said firmware, and  
said firmware constructing second DHCP packets and forwarding said second  
DHCP packets to said media access controller while bypassing said hardware filter.

8. The imaging apparatus of claim 7, wherein said networking hardware includes a data channel, wherein when said imaging apparatus is in said idle state, said data channel is not owned by a user.

9. The imaging apparatus of claim 7, further comprising an imaging buffer communicatively coupled to said hardware filter, wherein when said imaging apparatus is in said automatic IP address negotiation state, then said hardware filter does not pass imaging data packets to said imaging buffer, and when said imaging apparatus is in said imaging state said networking hardware passes imaging data packets to said imaging buffer.

10. The imaging apparatus of claim 7, wherein during said imaging state, said hardware filter prevents said first DHCP packets from being processed by said firmware.

11. A method of communicating with a shared imaging apparatus connected to a computer network, wherein communication over said network is facilitated through use of network packets, said method comprising the steps of:

- 5 providing said shared imaging apparatus with networking hardware;
- providing said shared imaging apparatus with imaging apparatus firmware;
- defining a data channel associated with said networking hardware;
- instructing said networking hardware to accept information on said data channel from a user that owns said data channel;
- processing automatic Internet Protocol (IP) address negotiation network packets
- 10 with said imaging apparatus firmware when said data channel is not owned; and
- processing second types of network packets, different from said automatic IP address negotiation network packets, by said networking hardware of said shared imaging apparatus when said data channel is owned.

12. The method of claim 11, wherein the step of processing automatic IP address negotiation network packets includes at least one of constructing, sending and receiving said automatic IP address negotiation network packets.



13. The method of claim 11, wherein when said data channel is not owned, then determining whether to place said shared imaging apparatus in an automatic IP address negotiation state, and if said shared imaging apparatus is placed in said automatic IP address negotiation state, then attempting to automatically assign an IP address to said shared imaging apparatus.
- 5 14. The method of claim 13, wherein said IP address is assigned automatically using a Dynamic Host Configuration Protocol (DHCP).
15. The method of claim 11, wherein said automatic IP address negotiation network packets includes Dynamic Host Configuration Protocol (DHCP) packets and Address Resolution Protocol (ARP) packets.
16. The method of claim 11, wherein said second types of said network packets comprises a proprietary protocol packet.
17. The method of claim 11, wherein said second types of said network packets comprise imaging data.
18. The method of claim 11, wherein when said data channel is not owned, then determining whether to place said shared imaging apparatus in an automatic Internet Protocol (IP) address negotiation state, and if said shared imaging apparatus is placed in said automatic IP address negotiation state, then attempting to automatically renew a current IP address for said shared imaging apparatus.
- 5 19. The method of claim 18, wherein said renewal of said current IP address is accomplished using a Dynamic Host Configuration Protocol (DHCP).
20. The method of claim 11, wherein when said shared imaging apparatus is in an idle state, then determining whether to place said shared imaging apparatus in an automatic Internet Protocol (IP) address negotiation state, and if said shared imaging apparatus is placed in said automatic IP address negotiation state, then attempting to automatically assign an IP address for said shared imaging apparatus.



21. The method of claim 11, wherein when said shared imaging apparatus is in an imaging state said networking hardware accepts said second types of network packets on said data channel only from said user that owns said data channel.
  
22. The method of claim 11, wherein when said shared imaging apparatus is in an imaging state, said networking hardware disregards all said automatic IP address negotiation network packets and all imaging data packets received from any user that does not own said data channel.  
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